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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,990	01/04/2002	Seung-Ki Joo	069457.0106	9637

7590 12/02/2003  
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EXAMINER

LF, THAO X

ART UNIT PAPER NUMBER

2814

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/038,990	JOO ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thao X Le	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 3-8, 10, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6627486 to Ohtani et al. and view of US 4908334 to Zuhr et al.

Regarding claims 1, 3, 5-6, Ohtani discloses a method of fabricating a semiconductor device including a crystallized active layer in fig. 2A-F comprising the steps of: providing a substrate 201, fig. 2A, depositing an amorphous silicon (a-Si) layer 203 on substrate, depositing a metal layer 207 for inducing low temperature crystallization of a-Si on at least a portion of a-Si layer, column 1 lines 59-67, by sputtering, column 10 line 3, and conducting a thermal treatment

of substrate so that a-Si layer is crystallized by metal induced lateral crystallization propagating from the portion covered by metal layer, column 12 lines 28-37.

But Ohtani does not disclose sputtering metal layer while heating substrate to a temperature that allow at least a portion of the deposited metal to react with the a-Si to form an oxidation-stable metal silicide film.

However, Zuhr reference discloses heating substrate while depositing a metal layer, column 1 line 10-16 to at a temperature in a range of 200-600°C, column 4 line 21. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the heating substrate while depositing a metal layer teaching of Zuhr with Nakamura, because it would have provided the silicon atoms necessary for forming the stoichiometric metallic silicide as taught by Zuhr, column 4 line 11-17 and abstract.

With respect to 'the deposited metal to react with the a-Si to form an oxidation-stable metal silicide film' limitation, when the claimed and the prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Regarding claim 4, Ohtani discloses the method wherein metal layer 207 is deposited using sputtering, column 10 lines 1-4.

Regarding to claims 7, Ohtani discloses the method wherein removing the remaining metal layer by etching, fig. 2B,

Regarding to claim 8, see discussion of claim 1 above

Regarding claim 10, Ohtani discloses the method wherein forming an insulation layer 204, column 11 line 34 on substrate 201 and a-Si 203, fig. 2A, removing a portion of insulation layer 204, fig. 2A to expose a portion of a-Si and depositing metal 207 on the exposed surface of a-Si.

With respect to heating the substrate, see discussion of claim 1 above.

Regarding claim 16-17, Ohtani discloses the method wherein the metal layer 207 is nickel or palladium, column 1 line 65-67.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is 703-306-0208. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Art Unit: 2814

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Thao X. le  
November 7, 2003

A handwritten signature in black ink, appearing to read 'Thao X. le', located in the center-right area of the page.